

REMARKS

Applicant thanks the Examiner for the very thorough consideration given the present application. Claims 11-27 are pending in the present application. The Examiner is respectfully requested to reconsider and withdraw his/her rejections in view of the amendments and remarks as set forth below.

I. Election/Restriction

Applicants affirm the election of Group I, claims 13, 14 and 16. With the indication that claims 11 and 19-27 are generic, claims 11, 13, 16, and 19-27 have been examined in this application.

II. Claim Rejections Under 35 U.S.C. § 102

Claims 11, 13, 14, 16, 19-27 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Nuss '419. This rejection is respectfully traversed.

At the outset, Applicant notes that claim 11 includes the limitation of "a controller actuating the gathering block to move from an unloading position to a predetermined loading position, wherein the gathering surface spaced apart from the guide surface at a predetermined distance to form a workpiece nest defined between the anvil, welding, gathering, and guide surfaces, and the controller actuates the gathering block to move in a time-controlled manner away from the working space back to the unloading position after welding has been completed." Similarly, independent claim 19 also includes the limitation of "a controller displacing at least one of the anvils forming the side faces from a predetermined loading position to an unloading position for a predetermined period of time sufficient to remove the welded workpieces and back to the predetermined loading

position upon terminating of the predetermined period of time to re-establish the preset width before the workpiece nest receives new workpieces.”

With regard to the above limitations directed to a controller, the Examiner asserts that Nuss discloses “a controller to move the gathering block (claim 3, col. 3, line 35 - col. 4, line 30).” The Examiner also asserts “that how the blocks are moved and how the controller operates are process limitations that hold little patentable weight in an apparatus claim.” Applicant submits initially that the disclosure of Nuss ‘419 fails to teach or suggest a controller for actuating either the gathering block or at least one of the anvils as recited in claims 11 and 19, respectively. Furthermore, Applicant submits that the Examiner’s assertion that process limitations hold little patentable weight in an apparatus claim is incorrect. In particular, Applicants direct the Examiner’s attention to the Court of Customs and Patent Appeals’ decision in In re Swineheart and Sfiligoj, 169 USPQ 226 (CCPA 1971) (copy attached). In that case, the court stated “we take the characterization ‘functional’, as used by the Patent Office and argued by the parties, to indicate nothing more than the fact that an attempt is being made to define something . . . by what it does rather than by what it is.” The court further stated that “there is nothing intrinsically wrong with the use of such a technique in drafting patent claims.” Indeed, we have even recognized in the past, the practical necessity for the use of functional language.” The court also stated that “any concern over the use of functional language at the so-called ‘point of novelty’ stems largely from the fear that an applicant will attempt to distinguish over a reference disclosure by emphasizing a property or function which may not be mentioned by the reference and thereby assert that his claimed subject matter is novel. Such a concern is not only irrelevant, it is misplaced.” Finally,

the court states that "we are convinced that there is no support, either in the actual holdings of prior cases or in the statute, for the proposition put forward here, that 'functional' language, in and of itself, renders a claim improper. We have also found no prior decision of this or any other court which may be said to hold that there is some other ground for objecting to a claim on the basis of any language, 'functional' or otherwise, beyond what is already sanctioned by the provisions of 35 U.S.C. § 112."

Applicant submits that the Court of Claims and Patent Appeals made it clear in its decision in In re Swineheart that the use of function language, even at the point of novelty, is not only proper, but should be given patentable weight. Therefore, Applicant submits that it was improper for the Examiner to take the position that the functional language related to the controller holds little patentable weight. Therefore, reconsideration and withdrawal of the rejections of these claims are respectfully requested.

III. Specification

Applicant has amended the specification for certain informalities. Therefore, consideration of the amendments made to the specification are respectfully requested.

IV. Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding office action, and as such, the present application is in condition for allowance. If the Examiner believes that personal

communication will expedite prosecution of this application, he is invited to telephone the undersigned at (248) 641-1600.

Prompt and favorable consideration of this amendment is respectfully requested.

Respectfully submitted,

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ATTACHMENT FOR SPECIFICATION AMENDMENTS
Serial No. 09/871,324

The following is a marked up version of each replacement paragraph and/or section of the specification in which underlines indicate insertions and brackets indicate deletions.

Please replace the following paragraphs:

[0018] [FIGS.] FIG. 5 is a front view in elevation, partly in cross-section, of a welding apparatus at a stage wherein a plurality of wires is loaded in a preset wire nest.

[0035] In the next stage of operation, as shown in FIG. 6, the anvil 26 controllably moves towards the gathering block upon the actuation of the air piston and cylinder unit 28 to stop at a small distance from a surface 50 of the gathering block. An amount of air pressure stored in the memory 40 of the CPU 38 may control the displacement of the anvil. Similarly to the controllable displacement of the gathering block, in addition to the controllable air pressure, a sensor [46] (not shown) may be installed to signal the end of the travel. As a result of such displacement, the wire nest containing at least one vertical column of the wires to be spliced is fully enclosed by surfaces 50, 52, 20 and 44 of the gathering block 30, anvil 20, tip guide 12, and the welding tip 18, respectively.

[0036] Subsequent to forming the wire nest, as shown in FIG. 7, the anvil [25] 26 and the tip guide 12 move vertically downward, as indicated by arrow C, to reduce the size of the wire nest. This displacement is controlled by the CPU 38 to exert

a predetermined pressure, as is stored in the memory 40, upon the stack of wires. Additional pressure sensors 54 shown diagrammatically and connected to the CPU 38 control the exerted pressure so it would be within a desirable range providing a high efficiency weld.

[0038] As a result of welding, the wires as shown in FIG. 8 are spliced and posses hydraulic pressure so to remove the spliced wires from the wire nest the gathering block 30, anvil 26 and tip guide 12 are retreated to a position shown in FIG. 9. After a predetermined period of time controlled by the CPU and sufficient for an operator to remove a slice 46 (FIG. 10), the gathering tool is displaced back to stop at the predetermined distance from the tip guide, as shown in FIG. 5. This period can last up to 5 seconds which allows the operator to remove the slice 46 and his/her hands before the gathering tool moves back to the initial position defining a predetermined width of the wire nest, as illustrated in FIG. 11. The gathering block and the anvil may start moving away from the wire nest either simultaneously or, preferably, sequentially by first retreating of the gathering [bock] block, and then moving the anvil 26 away from the nest.

[0039] During repeated use of the ultrasonic welding process, both the horn 22 and the tip 18, as shown in FIGS. 12-14 are exposed to substantial wear as a result of the ultrasonic vibration which generates a substantial amount of heat leading to premature failures of the tip and horn. To overcome this problem, the tip 20 has a pair of spaced apart holes 60, each of which has a continuous concentric pad 62, better seen in FIG. 14, that receives a respective bolt 64 fastening the tip 18 to an end face of the horn 22. As a consequence, focusing the ultrasonic vibration in a close proximity to

the bolt holes 60 by efficiently transmitting ultrasonic vibration through the pads 62 kept intact with the horn by means of the concentrated clamping force of the bolts. The extended surfaces of the tip provided with work surfaces 20 are free to vibrate without harm to the horn or welding tip, which improves productivity and quality of the weld as well as durability of the vibrating parts of the apparatus:

[0040] As shown in FIG. 13, the welding tip has four serrated work surfaces (only [two] two are shown), three of which are auxiliary to form a new welding surface upon exhaustion of the previously used surface by simply rotating the tip 18 around the horn 20.

[0041] Although the invention has been described with reference to a particular [arrangements] arrangement of parts, features and the like, these are not intended to exhaust all possible arrangements or features, and indeed many other modifications and variations will be ascertainable to those of skill in the art.